IN THE CLAIMS:

- 1. (Original) A magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.
- 2. (Original) A magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of an antiferromagnetic layer, a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.
- 3. (Original) A magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a ferromagnetic layer, an insulating layer and a semiconductor layer, and in which said ferromagnetic layer is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.
- 4. (Currently Amended) A magnetic head comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi

energy and the other spin has a metallic band at the same level. [[as recited in claim 1]].

- (Currently Amended) A magnetic sensor comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level. [[as recited in claim 1]].
- 6. (Currently Amended) A magnetic head comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of an antiferromagnetic layer, a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level [[as recited in claim 2]].
- 7. (Currently Amended) A magnetic sensor comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of an antiferromagnetic layer, a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level [[as recited in claim 2]].
- 8. (Currently Amended) A solid state memory comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in

which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level. [[as recited in claim 1]].

- 9. (Original) The magnetoresistance device according to claim 1, wherein said magnetoresistance device has a negative resistance when magnetizations of said first and second ferromagnetic layers are parallel to each other.
- 10. (Original) The magnetoresistance device according to claim 1, wherein said magnetoresistance device has a negative resistance when magnetizations of said first and second ferromagnetic layers are antiparallel to each other.
- 11. (Original) The magnetoresistance device according to claim 1, wherein said first or second ferromagnetic layer is formed of zinc-blende type MnC.
- 12. (Original) The magnetoresistance device according to claim 1, wherein said first or second ferromagnetic layer has a zinc-blende type crystal structure and is formed of an Mn compound.
- 13. (Original) The magnetoresistance device according to claim 1, wherein said first or second ferromagnetic layer has a zinc-blende type crystal structure and has a lattice constant in a range of 4.0 to 4.5 Angstroms.
- 14. (Currently Amended) A magnetic head which comprises a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level wherein said

magnetoresistance device has a negative resistance when magnetizations of said first and second ferromagnetic layers are antiparallel to each other [[as recited in claim 10]] and operates under a finite bias indicating a negative resistance area.